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ASTOUNDING

DISCLOSURES AND FRAUDS

IN THE

LIQUOR TRAFFIC.

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GEORGE C. DEMPSEY BOSTON, MASS.

PHILADELPHIA:
TO BE HAD AT THE TRACT SOCIETY,
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1860.

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FROM THE HEIRS OF
GEORGE C. DEMPSEY

PHILADELPHIA, March 13, 1860.

Rev. BENJ. T. SEWELL, *Dear Sir:* The samples of liquor furnished me by you, for analyzation, labeled, "Bedford Street Brandy," "Bedford Street Whiskies," and "Baker Street Gin," have been carefully attended to, and the following is the result, viz:

1st sample Bedford Street Brandy, 42 per cent. alcoholic spirits by volume, 34.5 per cent. alcoholic spirits by weight; 30.34 per cent. alcoholic spirits in richness; sp. gr. 0.960.

I find the liquor to be whisky adulterated with Pepper, Chlorine, Nitric Ether, Oil of Bitter Almonds, or Cherry laurel water, slight traces of Copper, Zinc, Sulphuric Acid, and Sugar coloring.

1st sample of Whisky, presented 37.5 per cent. alcoholic spirits by volume, 30.5 per cent. alcoholic spirits by weight; 29.79 per cent. alcoholic spirits in richness; sp. gr. 0.973.

2nd sample Whisky, Baker Street, 30 per cent. alcoholic spirits by volume, 24.6 per cent. alcoholic spirits by weight; 23.81 per cent. alcoholic spirits in richness; sp. gr. 0.964.6.

My reagents or tests, show these liquors to be adulterated with Pepper, Alum, Sulphuric Acid, Acetic Ether, and Strychnia, more decidedly and distinctly devoloped in the last and lowest per centage whisky.

4th sample, Baker Street Gin, 33 per cent. alcoholic spirits by volume, 27.2 per cent. alcoholic spirits by weight; 26.29 per cent. alcoholic sp. in richness; sp. gr. 0.963.

Quality, imitation, base neutral spirits, Oil of Juniper, Alum, Zinc, or what is usually called White Vitriol, Pepper, Cherry laurel water, Sugar, Lime, and Sulphuric Acid.

During the above day and date, was carefully analyzed two samples of liquor which were furnished by John Gabel, Esq.; the one labeled, "Chesnut Grove Whisky," and the other, "Walnut Grove Whisky," and the following was the result, viz:

1st sample, Chesnut Grove Whisky, 44 per cent. alcoholic spirits by volume, 37.5 per cent. alcoholic spirits by weight; 34.93 per cent. alcoholic spirits in richness; sp. gr. 0.940.

Adulterations, Alum, Zinc, Acetic Ether, Sulphuric Acid, Copper, Pepper, or Pelitory

Walnut Grove Whisky, 52 per cent. alcoholic spirits by volume, 44.8 per cent. alcoholic spirits by weight; 41.67 per cent. alcoholic spirits in richness; sp. gr. 0.930.

Adulterations, Sulphuric Acid, Sulph. Copper, Sulph. Zinc, or White Vitriol.

Given under my hand, in Philadelphia, the day and date above,

HIRAM COX, M. D.

BHS
Gift of
The Heirs of
George C. Dempsey

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ASTOUNDING DISCLOSURES.

MANY charges have been made against dealers in intoxicating liquors, as engaging in vile and dangerous adulterations. The Legislature of Ohio, in March, 1855, directed Dr. Hiram Cox, a distinguished Chemist of Cincinnati, to make a thorough examination of such liquors as are in the market. The following letter from Dr. Cox to James Black, Esq., of Lancaster, Pa., gives the result of his investigations. We advise every man, who is in the use of intoxicating liquors, to read it carefully, and then THINK BEFORE HE DRINKS. Can a man walk on hot coals and his feet not be burned? Can he take poison into his stomach and not be injured?

CINCINNATI, Ohio, Oct. 3d, 1859.

JAS. BLACK, ESQ.—*Dear Sir:* Yours of 29th September, dated Lancaster, Pa., is now before me. Although not personally acquainted, I take great pleasure in contributing my mite, in any and every possible mode, where the object is the bettering of the human family. I have had similar letters, with similar requests from every point of the compass—from the extreme North, South, East and West—to all of which I have cheerfully responded; believing, although the labor has been considerable, that it would tell in after years in the longevity and health of thousands, who would otherwise fill a premature grave; and would contribute to the happiness and comfort of thousands of mothers and children, who are and have been, unfortunately, connected with the unfortunate slaves of intemperance. I rejoice to know that my exposures of the *villianous* liquors with which the markets, East and West, are glutted, has had a salutary moral influence in almost every region of our happy Union. I have letters in my possession from ministers of the Gospel, from New Orleans, from Nashville, Tenn., from Florida, from New York, from Boston, from Richmond, Va., Alexandria, Norfolk, Washington City, Baltimore, Philadelphia, Pa., from Toronto, from Hamilton, Canada, and from all of our Eastern States—congratulating and encouraging me to continue my exposures—that they were causing men to think and stand aghast, more

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than anything they could do or say on the subject of temperance. The same effect has been produced in this community. One gentleman tapped me on the shoulder some little time past, and remarked at the same time, "Doctor, I rejoice to see you take the stand that you do on the subject of poisonous liquors. I can lay my hands on more than thirty of our best citizens, gentlemen, who were tippling and tippling from a dozen to to twenty times a day, and who were bidding fair to fill a drunkard's grave, who have stopped short, and do not, and pledge themselves that they never will, drink any more, for fear that they may get hold of some of the miserable adulterations that Dr. Cox is holding up to public view. Thank God!"

Chemists from various colleges have written to me, stating that they had analyzed numerous samples of the various alcoholic liquors in our markets, and find the same pernicious developments which I had, at various times, indicated in articles which I had written from time to time; one of which you will find at page 123, of the "Crusader," which accompanies this letter. Another evidence that the exposures which I have been making have had a salutary moral effect, is, that there has not been one-fourth as much liquor sold yearly since as was previously; and another is, that a number of large liquor establishments have closed; their proprietors ruining many of their fellow citizens who had become their sureties. A number of distilleries have closed in this vicinity. They have, as it is familiarly called, "burst their boilers." One year previous to these break-ups, one of our largest distillers and liquor merchants in the city, said to me, "Dr. Cox, your articles on the adulterations of liquors, have taken more trade from Cincinnati, and more money—at least $100,000 per month—since they have been put in circulation. For God's sake, stop them sir!—you will break us up. I have been to New York, and since to Boston, to Rochester, to Canada West, and have just returned; and wherever I stopped there was nothing talked of, but the poisoned liquors of Cincinnati, and Dr. Cox's exposures; for God's sake, I say again, stop it!"

Although the liquors are villianous in the extreme, there are *other* large cities equally as culpable. For example: "A gentleman of our city, a druggist, that he might have pure liquor as a medical article, and that kind for purity, &c., that he could recommend to his customers, went to New York and purchased two half-pipes of splendid "Seignette Brandy,"

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one *pale*, the other *dark*. When passing one day, he called me in to see his "*beautiful, pure* brandy," just from New York! I stopped, looked at it, smelled it, but before tasting it, happening to have some blue litmus paper in my pocket, I introduced a small piece, it came out red as scarlet! I then called for a polished spatula, put into it a tumbler containing, perhaps, half a gill, and waited on it fifteen minutes; at the expiration of which, the liquor was black as ink. The spatula corroded, and when dried, a thick coating of rust, which when wiped off left a copper coat, almost as thick as if it had been plated. I charged him on the spot, under the penalty of the law, not to sell a drop of it; took samples of it to my office, and the following is the result of the analysis, viz.:

1st sample, (*dark*) 55 per cent. alcoholic spirits by volume, and 41 per cent. by weight; specific gravity 0.945. The tests indicate *Sulphuric Acid*, *Nitric Acid*, *Nitric Ether*, *Prussic Acid*, *Guinea Pepper*, and an abundance of *Fusil Oil. Base*—common whisky, not one drop of wine.

2nd sample, (*pale*) 54 per cent. alcoholic spirits by volume, 40 per cent. by weight; specific gravity 0.955. This article has the same adulterations as the first, but in greater abundance, with the addition of *Catchuc*. Remark.—Most villianous connections.

As a matter of course, these articles of liquor could not be sold without a violation of the liquor law. Consequently, I condemned them. They were purchased on four months' time. The purchaser immediately notified the New York merchant of the character and quality of the goods, and directed him to send for them; but, instead of sending for them, he waited till the notes became due, and brought suit in our Court of Common Pleas. I analyzed the liquors in the presence of court and jury, showed them satisfactorily that they were the pernicious, poisonous and villianous liquors which I had represented them to be, and the defendant gained his case triumphantly; and Mr. New York merchant vanished before I could get a State's warrant, or he would now be learning an honest mode of making a living at one of our State institutions in Columbus. I was appointed to the office of Chemical Inspector on the 19th day of March, 1855. Since then I have made upwards of six hundred inspections of stores, and lots of liquors of every variety, and positively assert that 90 per cent. of all that I have analyzed, were adulterated with the most pernicious and poisonous ingredients. The business of inspecting against the will of men who are only governed by motives

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of cupidity, I have found an up-hill business. I have had more *lawing*, more squabbling and quarreling with unprincipled things, bearing the shape and form of men, made after God's image, since I have been engaged in the capacity of Inspector, than I had during half a century before. You may think I have heard it thunder some; well, so I have. I am 66 years old, but in all my recollection I have not heard *thunder* that had the same effect on my nervous system, nor any thing else to affect my sympathetic nerves so much as the sad effects of imbibing the miserable concoctions sold in our markets under the character of healthy beverage, with which *Cocktails, Brandy Smashers, Mint Juleps, &c., &c.*, are concocted, and which sent young men, all under 30 years old, and all sons of some of our most respectable citizens, to a premature grave, during the winter previous to my appointment; some of whom had not been drinking three months! Not only young men, but many old men of our city, who were not considered drunkards, died, during the same winter, the horrid death of the drunkard with the *Delirium Tremens!* These facts induced me to accept the unthankful appointment. Since the appointment I have, as physician to the Probate Court, examined upwards of four hundred insane cases, two-thirds of which number became insane from drinking the poisonous liquors sold at the doggeries and taverns of our city and country. Many of them were boys of from 19 to 20 years of age, some of whom were laboring under a hereditary taint; and perhaps in many of them the mental derangement would never have been developed, had they not drank of these poisonous decoctions. One boy 17 years of age, the principal support of a widowed mother and a little sister, was induced on the 4th of July, 1855, to drink some *beer*, and from *beer*, to the horrible *rot-gut whisky*, kept in the low doggeries of our city. They all got drunk, and the boy referred to became hopelessly, and incurably insane, and is yet in the Insane Asylum at Dayton. In examining the case, for the purpose of getting all the antecedents with it, I learned that the grandfather of the boy died insane. I think the probability is altogether in favor of the idea that the insanity never would have been developed in this case, had not these poisoned admixtures acted as a powerful excitant cause. I called at a grocery store one day, where liquor also is kept. A couple of Irishmen came in while I was there and called for some whisky; and the first drank, and the moment he drank the tears flowed freely, while he at the same time caught his breath like one

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suffocating or strangling. When he could speak, he said to his companion, "Och, Michael, but this is warming to the sthomach!" Michael drank, and went through like contortions, with the remark, "Wouldn't it be foine in a cowld frhosty morning?" After they had drank, I asked the landlord to pour me out a little in a tumbler, in which I dipped a slip of litmus paper, which was no sooner wet than it put on a scarlet hue. I went to my office, got my instruments and examined it. I found it had 17 per cent. alcoholic spirits by weight, when it should have had 40 per cent. to be proof, and the difference in per centage made up by *Sulphuric Acid*, *Red Pepper*, *Pellitory*, *Costic Pottasa* and *Brucine*, one of the salts of *Nucis Vomicæ*, commonly called Nux Vomica. One pint of such liquor would kill the strongest man. I had the manufacturer indicted, but by such villiany he has become wealthy, and I never have, owing to some defect in the law, been able to bring that case to a final issue.

Yours respectfully,
HIRAM COX, M. D.

RECEIPTS FOR MAKING WINE AND BRANDY.

MADEIRA WINE.

20 gals. prepared Cider, add
5 gals. Madeira Wine,
1½ gals. pure proof Spirits,
2 ozs. Tartaric Acid,
1½ drs. Essential Oil of Bitter Almonds cut in a half pint Alcohol.
1 gal. good Brandy,
2 lbs. Raisins,
½ lb. lean Beef.

COGNAC.

20 gals. pure Spirits,
5 gals. pure Cognac Brandy,
1½ ozs. Oil of Cognac,
¾ oz. Ocnanthic Acid,
¾ oz. Actic Ether,
1½ oz. Tincture of Kino,
1 pt. Simple Syrup,
2 oz. Salt.

The above are receipts used in France and other wine producing countries, where nearly all, if not all, liquors for sale are adulterated; for making the *best* Madeira and the *best* Cognac. It will be observed, that they contain only five gallons of the pure articles in twenty-five gallons. In this country the pure are not to be had, and the French manufactured liquors are substituted in their place. As these have but five gallons in twenty-five, or one in five, the American, made after similar receipts, contains but one gallon in twenty-five, and an increased proportion of the acids and drugs. But the

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liquors thus made, are sold as the first qualities of wines and brandies. The inferior and cheaper kinds, as they descend in grade in proportion to the cupidity of the manufacturer, have less and less of the real articles, until they disappear altogether and their places are supplied by sharp acids, and mineral vegetable and animal poisons, of the most disgusting and dangerous characters, as will appear in the following pages. All other brandies, wines and fermented liquors, it will be seen, are subjected to similar or worse adulterations, to enable the manufacturer to administer poisons in disguise, under the names of well known beverages, and to sell for dollars what cost only a few cents. Few persons will hesitate to believe the following statements, as it is a well known fact, that the wine growing countries do not produce one-fifth of the quantity sold and consumed as such in those countries, and that not one-tenth of that sold in the United States is imported. It follows that it is a composition made to resemble nearly in taste the real article. The same is true of brandies and other liquors.

For some time back, endeavors have been made to convince the public that distillers and brewers have been slandered and abused. If they have, it ought to be made manifest. The object of these communications will be, to prove that counterfeiting and deception is one prominent feature of the trade; and that these counterfeits, while many of them, are accompanied by harmless ingredients, are often made by exceedingly dangerous materials. The proof will be drawn from standard works, of acknowledged authority in the trade. The nature of the drugs used, will be pointed out by authors, whose reputation for honesty and science none dare question. Some are proposing to make it a penitentiary offence. And certainly, if the design of penal laws is, to protect the public against injury, there is much ground to justify the proposition. For whether the ingredients used are innocent or not, they are used for the dishonest purpose of giving a false value to the goods; and thereby selling at a great price inferior and falsified liquors; thus fraudulently obtaining the people's money, oftentimes at the expense of their lives. It will appear, from their own confession, that the whole, in its best state, is nothing but a trade in deadly poison.

Dubunfaut and Jones, translated by Sheridan, 4th edition,

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London, 1830. This work is a master-piece, written by men of science and honesty, and is sold at a very extravagant price, for so small a book—$3 50.

Page 120. It is a custom among some gentlemen of the trade, to put one-third, or one-fourth brandy, proportionably to what rum they sell, which cannot be distinguished but by an extraordinary palate, &c.

123. Some are in the habit of using a handful of grains to make the goods feel hot upon the palate, as though they bore a better body, &c. (Would any honest man do this? These grains are often poisons, as will be shown.)

132. On the peculiar qualities of French brandies. They are designedly imitated. Dulcified nitre is used for that purpose.

140. Many distillers substitute caustic alkalies—in fact, almost every distiller has some secret nostrum for rectifying his spirits. They may be all reduced to three; by fixing alkaline salts; by acid spirits mixed with saline salts; and by saline bodies and flavoring additions.

145. Malt spirit is usually sold by weight to rectifying distillers, who distil it over again, combining it with certain materials, with a view of making it into gin, brandy, rum, &c. (A man who would thus defraud in any other business would most certainly deserve the penitentiary.)

158. Speaking of the various methods used for the sophistication of brandy, &c., he says of one of them: "This brandy recedes from those distilled spirits reckoned safe and wholesome." Of another method: "This brandy is more depraved than the first, as it comes over the still nearly as so much ardent spirits (malt) mixed with brandy, and it will of course exert its noxious qualities upon those who drink it."

The most general method of adulterating is, by putting a counterfeit kind to the genuine. This counterfeit brandy is made of malt spirits, dulcified by a re-distillation of acids.

159. Lapis infernalis, (infernal stone,) made of lime, pearl-ash, pot-ash, &c., is used for keeping down the *feints*, has a great effect upon the wholesomeness of the liquors. The acid used in the preparation of counterfeit brandy, is, aqua fortis. When combined with rectified spirits, it raises a flavor and taste much resembling those of brandy; but if a certain proportion of water be mixed with such brandy, a separation of the ardent spirits and acid immediately follows. The noxious effects of those on the health of persons who drink such brandy, are often melancholy in the extreme.

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161. He mentions that various simple additions are made to weak spirits to give a heat.

193. Pearl-ashes, pot-ash ashes, soper's ley water, oil of almonds, oil of vitriol, &c., to make *artificial proof*. So convinced was he of the danger of this, that he says: "Notwithstanding I have given it, I do not recommend any to use it."

194. Vitriolic liquor, composed of spirits of wine, oil of vitriol, and the stronger caustics, &c., used to dissolve and to keep in solution the poisonous oils in liquor, and to prevent waste.

197. Dulcified spirit of nitre, made of spirit of wine and nitrous acid; to make counterfeit French brandy.

205. Oil of wormwood.

210. Kernels of apricots, nectarines, peaches, and bitter almonds.

212. Oil or essence of ambergris.

214. Alum.

221. Logwood.

256. Pepper.

486. Pot-ashes, alkalis, salt worts, and lime.

202. Spirits of nitre, neither strong nor dulcified, used to give vinosity to spirits.

235. Carbonic acid gas for wines—To *conceal* their acidity by certain substances, as if this cannot be longer done, to turn them into vinegar.

475. Acids used to give sharpness to liquors, &c.

463. The essential oil, or empyreuma, acrid and caustic.

468. This oil is so energetic that a few drops are sufficient to give an obnoxious taste to a whole pipe. It is most difficult to succeed in separating this oil from distilled spirits. The distillers use other ingredients to *mask* their qualities.

469. Grain and potatoes, when distilled, have an essential oil, from certain causes, much worse than that furnished by those vegetables. This oil is acrid, and extremely caustic. Distillers endeavor to disguise its flavor.

507. The oil in the spirits of lees is so penetrating and acrid, that six drops are sufficient to infest a whole pipe.

508. It is certain that lees-spirit contain a peculiar oil, odorous, and very acrid, altering their qualities very much.

486. Distillers in Paris have the art of making potatoe brandy pass off as raisin, or French brandy, (487,) by mixing it with raisin brandy. The greater part of consumers seldom find out that it is falsified.

From Dubrunfaut, Jones, and Sheridan, it was established,

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that liquors were counterfeited, falsified—that this was done by grains, logwood, alum, aquæfortis, nitrous acid, oil of vitriol, oil of almonds—kernels of such fruits as peaches, nectarines, &c., lapis infernalis, pot-ashes, pearl-ashes, soper's ley, amber, wormwood, pepper, &c. That the oils of all distilled liquors are acrid, pungent, penetrating, caustic in a high degree. And that alcohol itself is a poison. The investigation is now continued further to establish the same positions.

Extracts from The Wine and Spirit Merchant's Companion. J. Hartley, London, 1835. Cost very high—$2 50.

Page 13. Beading for brandy, rum, &c. Oil of sweet almonds, oil of vitriol, &c.

15. Clearings for wine. The size of a walnut of sugar of lead, with sal-eruxum.

25. Fining for gin. Roach alum.

30. To make gin. Oils of juniper, bitter almonds, casha, oil of vitriol.

31. Twenty gallons of water may be added, as the ingredients (30) will give ten gallons more apparent strength.

32. To clear tainted gin. American pot-ash, roach alum, salts of tartar, &c.

35. Rum reduced with strong beer and water, which is sold for rum.

41. To make brandy imitate the French, oil of cassia, bitter almonds, tincture of isponia, venella, &c. (42.)

83. To make spirits over proof. Soap and pot-ashes.

127. To imitate port wine. Cider, brandy, and a little port, made rough with certain ingredients, &c.

144. To sweeten casks. Boil fresh cow-dung, and soak the casks with it.

151. To strengthen gin. Be particular in the quantity used. The spirits will appear stronger than they really are, by five per cent. Blue stone, oil of vitriol, oil of almonds, &c.

154. Cordial gin. Oil of bitter almonds, oil of vitriol, and oil of turpentine, &c

163. Hops. The intense bitter some hops afford, act very injuriously on the stomach; it is a fact noticed by ancients and moderns, that those persons who accustom themselves to intense bitters generally die suddenly. It is necessary to understand the different qualities—soil, and climate, and cultivation affect them.

174. Amber, and Spanish juice.

189–190. To bring beer forward. Oil of vitriol, &c. This will make new beer appear twelve months old.

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191. Some articles used in brewing are contrary to law.

192. Spanish angelica root.

From this author is proved, that counterfeit liquors are made—that the intent is to deceive—that poisons are used for this purpose—and that ingredients *honestly* used are dangerous. The investigation will be continued by furnishing extracts from S. Childs' Practical Treatise on Brewery, 11th edition. After enumerating the numerous ingredients for brewing porter, page 7, he says, "However much they may surprise, however disagreeable or pernicious they may appear, he has always found them requisite in brewing porter, and he thinks they must be invariably used by those who wish to continue the taste, flavor, and appearance of the beer."

Page 16. Though acts have been passed to prevent porter brewers from using many of them, yet the author can affirm from experience that he could never produce the present flavored porter without them.

Again, page 16. The intoxicating qualities of porter are to be ascribed to the various drugs intermixed with it. It is evident that some porter is more heady than other, and it arises from the greater or less quantity of stupifying ingredients. Malt, to produce intoxication, must be used in such large quantities as would very much diminish, if not totally exclude the brewer's profit.

The ingredients mentioned by Child, and also by Maurice, and by the author of the "Home and Country Brewer," are various narcotics for producing stupefaction.

Alum, hops, calamus, cocculus indicus, coriander, capsicum, caraway seed, ginger, gentian, grains of paradise, nux vomica, quassia, salt, copperas, tobacco, opium, lime, soda, &c.

Jackson, an English chemist, of notorious memory, first fell upon the plan of brewing from various drugs; and from that time to this, various written directions, and receipt books for using these preparations. And agents are to be found in England who sell the articles manufactured for the brewers only. Accum on Poisons, 117.

To give beer a cauliflower head, beer heading is used, composed of green vitriol, alum, and salt. Alum gives likewise a smack of age to beer, and is penetrating to the palate. (J. Child.)

Page 23. To make new beer older, use oil of vitriol. (J. Childs.)

From a "Treatise on Brewing and Distilling," (by Shan-

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non.) Page 167. It is a custom among retailing distillers, which I have not taken notice of in this directory, to put one-third, or one-fourth part of proof molasses brandy, proportionably, to what rum they dispose of; which cannot be distinguished except by an extraordinary palate, and does not at all lessen the body or quality of the goods; but makes them about two shillings a gallon cheaper; and must be well mixed and incorporated together in your retailing cask; but you should keep some of the best rum, not adulterated, to please some customers, whose judgment and palate must be humored.

232. Directions are given how to cheat in drawing and showing the proof. How to charge more to some persons than to others, &c.

233. All brandies, whether French, Spanish, or English, being proof goods, will admit of one pint of liquor (water) to the gallon; and all persons that insist upon having proof goods, which not one in twenty understands, you must supply out of what goods are not so reduced, though at a higher price.

Can any doubt from these testimonies that there is a great deal of cheating, counterfeiting, deceiving, poisoning, connected with the traffic of intoxicating drinks? Some of the articles used are harmless—some dangerous. But all are fraudulently used to deceive the people, without reference to anything else than to sell for a greater profit.

M. P. Orfila, on Poisons. First American edition. Baltimore, 1819.

Page 198. Wines adulterated by various substances. The object is, to mask defects, to give color, odor, or strength.

Page 199. Wines adulterated by lead.

Sugar of lead, cerusse, and still more frequently, litharge, are mixed with acid or sharp tasted wines, in order to render them less so, and these substances do, in fact, give them a sweet taste. Of all frauds this is the most dangerous. He describes the effect of sugar of lead, pages 74, 75. It gives a sweet astringent, metallic taste, constriction of the throat, pain in the stomach, desire to vomit, or vomiting; page 47, fœted eructations, hickup, difficulty of respiration, thirst, cramps, coldness of limbs, convulsions, change of features, delirium, &c.

White wines, adulterated with lead.

202. Red wines adulterated with lead.

208. Wines adulterated with alum.

The object of this adulteration, is, to render the wines

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redder and less changeable; and to give them an astringent taste. Affects, digestion painful, vomiting from time to time, obstructions of bowels, and piles are the result of drinking wine thus adulterated.

206. Wines adulterated with chalk. Design, to saturate the acetic, or tartaric acid, and to destroy the sharpness, &c. They are much safer, but give rise to disagreeable symptoms if they contain too great a quantity of the acetate of lime.

207. Wines adulterated by brandy. It occurs sometimes that brandy is added to weak wines; in other circumstances wine is made with a mixture of cider or other spirituous liquor, and brandy; log-wood, sandal-wood, or some other coloring matter being added. These adulterations have no other inconvenience than that of producing intoxication more readily, and frequently occasioning great headache.

209. Means employed to give a color to wine. Old wines, being in general, of a deeper color than new, those who sell wines endeavor frequently to give a deeper color to their new wines. This is done by exposing to the air, by sugar and sugar candy, (innocent in effects,) by the aid of sulphureous acid gas. This fraud is dangerous, and by vaccinum myrtillus, log-wood chips, and other substances, which also render them astringent.

210. Wines adulterated by sweet or astringent substances. Sugar, raisins, or sweet wines, extract of oak or willow bark. These are innocent, but used to deceive.

211. Arsenic, copperas, and antimony as accidentally, (never designedly,) introduced into wines, give rise to dreadful accidents.

M. P. Orfila's opinion of substances used in the trade; pages 34 and 35.

Sulphuric and nitric acid, and alkalies, &c. They inflame the parts with which they are placed in contact, but in different degrees. There are some which produce so great an inflammation that they may be regarded as caustics almost as powerful as the actual cautery. They are all called corrosives, or escharotics; they evidently cause death in the same manner as burns. Such are the concentrated acids and alkalies, &c. There are others, whose caustic effects are less intense, but which produce death in a more rapid manner, because they are absorbed, mixed with the blood, carried into the circulation, destroy the vital properties of the heart, lungs, brain, and nervous system.

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44. The effect of the alkalies is nearly similar to that caused by acids, &c.

Page 75. In addition to what has been before stated on this subject, he says: "If, in place of taking a large dose of lead, water, or wine, containing but a small portion, has been swallowed, no immediate inconvenience is felt; but if the practice of drinking such water or wine be continued, a disease similar to the colic of painters will eventually arise, which in certain cases is true palsy."

Page 100. Nux vomica, cocculus indicus, introduced into the stomach, or applied to wounds, these poisons are repeatedly absorbed, and affect the brain and spinal marrow near the neck. They occasion a general rigidity and convulsions. The head is thrown back, the chest is dilated with difficulty, respiration becomes greatly impeded, and death is the consequence, and this in a very few moments, if the dose has been great. None of these inflame the parts they touch. The effects of some are not continual, but give rise to fits from time to time, in the intervals of which, the individual appears little affected.

Page 94. Opium and poppy heads are more or less poisonous.

Extracts from Accum on Culinary Poisons. Philadelphia, 1820.

74. It is sufficiently evident that few of these commodities, which are the objects of commerce, are adulterated to a greater extent than wine. Alum, Brazil wood, gypsum, oak sawdust, and husk of filberts are used to brighten, color, clear, and make astringent wines. A mixture of spoiled foreign and home-made wines is converted into the wretched compound frequently sold under the name of *Genuine Old Port.*

75. Various expedients are resorted to for the purpose of communicating particular flavors, to insipid wines. Bitter almonds, tincture seeds of raisins, cherry laurel water, &c., are used.

76. The sophistication of wine with substances not absolutely noxious to health, is carried on to an enormous extent in London. Many thousand pipes of spoiled cider are annually brought hither from the country, for the purpose of being converted into factitious port wine.

78–80. Artisans are regularly employed in staining casks, and crusting casks and bottles, and making an astringent extract for old port. There are many other sophistications which are deceptive, and connected with another branch, of an absolutely criminal nature.

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81. Several well authenticated facts prove these adulterations of wine with substances deleterious to health, is certainly practised oftener than is perhaps suspected.

82. The most dangerous adulteration of wine is by some preparations of lead. Lead is certainly employed for this purpose. Wine merchants persuade themselves that the minute quantity of lead employed for that purpose is perfectly harmless. But chemical analysis proves the contrary. And it must be pronounced as highly deleterious. Lead, in whatever state it is taken into the stomach, occasions terrible diseases. And wine, adulterated with the minutest quantity of it, becomes a slow poison. The merchant or dealer, who practices this dangerous sophistication, adds the crime of murder to that of fraud, and deliberately scatters the seeds of disease and death among those who contribute to his emolument.

113. Malt liquor, and particularly porter, is among those articles in the manufacture of which the greatest frauds are committed.

115. Unwholesome ingredients are used by fraudulent brewers, and very deleterious substances are also vended, both to brewers and retailers, for adulterating beer.

116. The fraud of imparting to beer and ale an intoxicating quality by narcotic substances appears to have flourished in 1806. And during the French war, more cocculus indicus was imported in five years, than had been before in the course of twelve years.

131. Quassia chips are used as a substitute for hops. Vast quantities of the shavings of this wood are sold in a half torrified and ground state, to disguise its obvious character, and to prevent its being recognized among the waste materials of the brewers.

132. Wormwood has likewise been used by fraudulent brewers.

134. Green vitriol, alum, and salt are used to give a head to beer. And the retailers frequently adulterate with isinglass, molasses, gentian root, and mixing beer and porter together.

148. After mentioning many ways of sophistication, he says: "To make beer *entire*, or old, the brewers now need none of these; for, by an admixture of sulphuric acid, it is done in an instant."

149. Alkaline earth, or alkali oyster-shell powder, and subcarbonate of potash are used to make sour stale beer into mild.

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150. To increase the intoxicating qualities of beer, cocculus indicus, opium, nux vomica, and extract of poppies are used.

Extracts from the Domestic Chemist, Polytechnic Library, London, 1831.

Page 13. All compounds of lead, such as litharge, red lead, and white lead, are highly poisonous.

14. Cider is frequently rendered poisonous by lead, generally in consequence of the addition of sugar of lead. Sour wine is frequently improved in taste by the addition of litharge. Many kinds of spirituous liquors are frequently adulterated by the addition of sugar of lead.

37. Green vitriol, or sulphate of iron, is one of the compounds most frequently resorted to in the adulteration of beer. It is a common practice with publicans (retailers) in London, to mix all kinds of strong beer with a considerable proportion of small beer and water, and as this produces a mixture so flat, &c., they give it an artificial roughness by the addition of green vitriol, &c.

45. Lime is capable of producing death when introduced in large quantities into the human body.

50. Potash is a dangerous poison. As an adulterane it is added to wine and beer to saturate the acetic acid which forms in those liquids.

51. Soda, caustic soda, and all of its compounds, is poisonous. Carbonate of soda is used in the adulteration of wine and beer.

53. Sulphuric acid. This compound, the oil of vitriol of commerce, is the strongest of all the acids. On account of its acidulating power and extreme cheapness, it is frequently used to give strength and roughness of taste to beer. As a constituent of alum, green vitriol, and other compounds, it enters as an adulterane into beer, gin, &c.

56. Nitric acid, the strongest kind of aqua fortis. (Proved to be used by distillers, &c., by J. Hartley.)

61. Prussic acid. The liquids in common use which produce this, and in the various oils and aromatic waters produced from the bitter almond, the cherry laurel, &c. Noyeau is a weak poison of this description. (Proved by all to be used by distillers.)

63. Bitter almond. Its essential oil is an extremely powerful poison. A single drop of it killed a cat in five minutes. This vegetable often produces in man a state resembling in-

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toxication—sometimes an eruption like nettle root. It has been often the cause of death.

63–4. Cherry laurel. Many persons have been killed by rectified brandy flavored with laurel leaves.

64. The peach. Most parts of the plant, but especially the flowers and kernals, exhale the odor of bitter almonds. It often causes death.

The cluster cherry. It has a disagreeable taste, but gives a pleasant flavor to spirituous liquors. It is highly poisonous.

66. Opium is a poison. (Proved to be used in adulterating beer and porter, &c.)

95. Beer. By the term *beer*, I understand a liquor brewed from malt and hops. Ale of all kinds, London porter, and brown stout, are varieties of beer. The liquor usually sold under one or the other of these names, is said to be occasionally adulterated with the following ingredients, viz.:

Cocculus Indicus, Opium, Extract of Poppies, St. Ignatius' Bean, Nux Vomica, Tobacco, Bohemian Rosemary, Henbane, Aloes, Quassia Wood, Extract of Gentian, Sweet-scented Flag, Wormwood, Hoarhound, Bitter Oranges, Spanish Liquorice, Molasses (treacle), Mucilage of Flaxseed, Burnt Flour, Burnt Sugar, Burnt Treacle, Burnt Malt, Copseum Ginger, Cassia Buds, Grains of Paridise, Coriander Seed, Orange Peels, Caraway Seed, Isinglass, Whites of Eggs, Hartshorn, Preparations of Fish, Honey, Sulphuric and Sulphate of Iron, Alum, or Sulphate of Alumena and Potash, Gypsum, or Sulphate of Lime, Oyster Shells, Egg Shells, Crabs' Claws, Marble, Chalk, (carbonate of lime,) Carbonate of Potash, Carbonate of Soda, Common Salt, Water, Small Beer. In all forty-eight compounds.

96. Some of these adulterants are employed by the brewer, others by the sellers. Or, in other words, some of them are used in the *brewing* of beer, and others are *added* to the beer after it is brewed. The object of the brewer is to save malt and hops. The object of the publican is to multiply or increase the quantity of his beer. The liquor produced by the *doctoring brewer*, is a spurious imitation of beer; that produced by the seller is a mixture of such beer with colored water. Either of these liquors is wholesome, dangerous, or poisonous, according to the proportion which its noxious ingredients bear to its malt, hops and water.

97. When the brewer makes a large quantity of beer from a small quantity of hops and malts, or when the seller mixes his strong beer with water and small beer, the product is al-

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ways in a state of disease; that is to say, the resulting beer is so weak and vapid, that no mortal man can be induced to pour it down his throat. But as beer of this kind is always made to sell, and as nobody will buy it while it is in a state of evident disease, the ingenuity of the beer doctor is taxed to supply the means of giving a *healthy* APPEARANCE to the liquor, which is afflicted with the most incurable disorder. It is not deemed, either by the brewer or the publican, that the diseased beer should be rendered *absolutely good;* it is quite sufficient for their purposes that it should be made to *appear* good. All that they insist upon is, that the beer shall be put into a *saleable* state; they do not trouble themselves with reflections about its *wholesomeness* or *unwholesomeness;* nor, indeed, is there any reason why they should; for it is evident that reflections of that sort ought to be made by the individuals who have the *drinking* of the beer, and not by those who have merely the *selling* of it.

98. The diseases of beer, and their favorite remedies, are as follows:

Remedies for want of Alcohol. All beer which has been made from malt, contains a certain quantity of pure spirit, to the presence of which its exhilirating and intoxicating qualities are attributable. Beer, deficient in malt, is deficient in alcohol. When the deficiency is large the beer is weak. This deficiency is remedied by the introduction of Cocculus Indicus, Opium, Extract of Poppies, St. Ignatius' Bean, Nux Vomica, Tobacco, Bohemian Rosemary, Henbane, which all possess the property of *stupifying* or *intoxicating* the persons who swallow them. The objection to the use of them is simply this, that they are all poisonous. This, to be sure, is a trifling considerarion for the *beer doctor*, but it is of pretty considerable importance to the *beer drinker;* on which account I shall briefly state the peculiar properties of their adulterants.

99. Cocculus Indicus is a familiar poison to kill fish. It yields a fifth part of its weight of picrotoxa—ten grains of which are sufficient to kill a dog in twenty-five minutes. Its property is to save both *malt* and *hops*.

Opium. When this drug is taken in small quantities, it is highly stimulating. The symptoms of poisoning by opium, are giddiness, stupor, insensibility, slow breathing, ghastly appearance, death.

100. St. Ignatius' Bean. This contains nearly eighteen parts in one thousand of strychnia, the most deadly of all

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known poisons, except Prussic Acid. This is the poison contained in the Upas tree of Java.

Nux Vomica. This substance contains a large quantity of strychnia, the alkaline substance which forms the poison in the Upas tree and St. Ignatius Bean. It is so intensely bitter, that one grain deposited in eighty pounds of water, produces a bitter solution.

103. Tobacco. A poison producing transient excitement, sudden giddiness, fainting, great sickness, accompanied by a weak quivering pulse, and some degree of somnolency, vomiting, stupor, spasms, &c.

Bohemian Rosemary is said to produce a quick and raving intoxication, or temporary madness.

Henbane, in small doses, produces pleasant sleep, but in some subjects, headache, delirium, nausea, vomiting, and feverishness.

Such are the properties of a few of the substances used in the adulteration of beer.

Who doubts, then, of the position that cheating, adulterating, counterfeiting, and poisoning, is connected with the business? Who will run the *risk* of drinking such stuff while he can get cold water.

It is purposed to pursue the investigation of the subject of the frauds practised in the traffic of intoxicating liquors. The proof will be continued from the Domestic Chymist.

104. Remedies for want of sugar. To supply the want of saccharine matter which is characteristic of beer that has either been brewed from too small a quantity of malt, or mixed with water, it is customary with the beer doctors to add the following adulterants: Spanish liquorice, molasses, honey, mucilage of flaxseed. (They are all harmless in themselves, but are used for roguish purposes, that of deceiving the people.)

Extracts from the Domestic Chemist, Polytechnic Library, London, 1831.

Page 105. Remedies for want of bitterness. If a sufficiency of hops are not used, it is liable to detection by the taste. To prevent this, a variety of substances possessing the bitterness of the hops are used. Aloes, quassia wood, extract of gentian, calamus, wormwood, hoarhound, bitter oranges. (All more or less injurious, according to the condensity of their bitterness, [See Hortty,] but if not dangerous, used to cheat.)

106. Remedies for pungency. Capsicum, ginger, cassia buds, grains of paradise, coriander seed, orange peels, caraway

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seeds, &c. Whether these are injurious or not, as some contend and others deny, if taken in small doses, the cheat and counterfeit is proved.

107. Remedies for muddiness. This remedy is termed fining. Isinglass, whites of eggs, hartshorn, preparations of fish, and oil of vitriol are employed. (Cheating and poisoning both.)

108–9. Remedy for want of age. Sulphuric Acid. This acid effects as great a change in taste in beer in five minutes, as time can effect in five years.

109. Remedy for want of astringency. Of all the substances used in adulteration, water and small beer are used in the largest doses. This makes the liquor insipid. To remedy this, the hot, bitter, stupifying drugs already mentioned, and an addition of green vitriol are employed. 110 The employment of green vitriol is carried to an amazing extent.

111. The remedy for old age. As the ingenuity of the beer doctor has detected a method of converting *new* beer into *old*, so also, has it discovered the means of converting *old* beer into *new*. The substances used for this purpose are the alkalies, lime, potash, and soda, or substances containing lime and phosphoric and carbonic acid united to lime, or substances which contain carbonic acid alone. (An injurious, vile deception.)

112. Remedies for want of froth. Green vitriol, alum and salt.

113. For convenience of brewers and publicans who are addicted to the adulteration of beer, a variety of compound drugs are made up, ready for sale, labeled, multum, hard multum, bethern, bethern balls, essentia bina, beer heading, &c.

122. The London spirit sellers are little behind their brethren of Paris in ingenuity of sophistication. It is common with them to make cognac brandy with common malt liquors, &c. It is customary with some spirit merchants to communicate to brandy a hot taste by various additions of aromatics, &c. Some clear with sugar of lead. Ought not this practice be repressed? It is in vain to say that that the quantity of lead is too small to injure. Facts prove most decidedly that a proportion of sugar of lead, so small as to be scarcely sensible to the power of re-agents, is capable of acting in a most injurious manner, when taken in the human system, with regularity, and for a long time.

124. English brandy it is stated, consists of malt spirit, sweet spirit of nitre, and terra japonica.

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150. Pure gin is prepared by redistilling malt spirit over juniper berries; but the common kind of English gin is flavored by spirit of turpentine, instead of oil of junipers.

151. The retailers of gin dilute it largely with water and sweeten it with sugar; then clarify with alum, solution of carbonate of potash, or by the addition of sugar of lead, which, on account of its superior efficacy, is the most general method, and renders the gin poisonous. But the gin spinners consider this to be of no importance, provided the liquor can be made to sell. On this account the public should look to themselves, if they are desirous of avoiding death.

S. Child, Every Man his own Brewer. Philadelphia.

7. The profits of Brewers:

Materials.	Cost.
1 gr. malt, 8 bushels,	$8 00
8 lbs. of hops,	1 00
9 lbs. treacle,	75
8 lbs. essentia bina,	1 00
8 lbs. liquorice root,	2 50
8 lbs. colores,	1 00
½ lb. capsicum,	1
2 oz. Spanish liquorice,	9
¼ oz. cocculus indicus	1
2 drachms salt of tartar,	1
¼ oz. heading,	1
3 oz. ginger,	10
4 oz. lime,	
1 oz. linseed,	2
2 drachms cinnamon,	1
	$14 51

This makes five barrels of porter.

9. Ale receipt:

Materials.	Cost.
2½ bushels of malt,	$2 50
2½ lbs. hops,	32
3 lbs sugar,	37½
Capsicum 2 cents; coriander 2 cents,	4
Cocculus indicus 2 cents; salt 2 cents,	4
	$3 27½

Makes thirty-two gallons.

The same bought at retail, $25 60; profit, $22 32½.

Add to this gain the value of the small beer, which may be made by a second mashing, &c., and their produce will be a very good equivalent for trouble.

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13. When hops are dear, a number of other bitters have been used, as the herbs hoarhound, daucus or wild carrot-seed, wormwood, &c.

16. Cocculus Indicus, commonly called cocculus India-berries, is very poisonous, and stupefactive, and by its great strength attacks the head. It is ground into fine powder, and too often mixed with malt liquors to make them intoxicating. It is the fruit of the menus periam cocculus, and can only be used to the prejudice of the public.

Heading is a mixture of half alum and half copperas, ground to powder. Alum is a great drier, and causes that thirst which some beers create, so that the more you drink, the more you want.

17. The property of copperas is well-known to be dangerous and destructive. As heading (froth) is not necessary, we would not recommend its use.

Coriander seed is of a vehemently poisonous and stupifying nature; one pound of which is equal to one bushel of malt in strength and intoxicating qualities. Some of the articles, such as linseed, &c., are used solely to give flavor to the liquor. Hence it is that so few brewers are found to resemble each other in their produce. But the cocculus indicus, coriander seed and heading, are poisonous, not to say pernicious in the highest degree, and the use of them affords one of the many proofs of the little regard paid to the health of society by interested persons.

26. The capsicum and coriander seed are boiled in the wort. When it is sufficiently wrought, it is cleared by adding salt-flower, mixed up with the cocculus berries, &c.

The quantity of capsicum in one barrel of beer, is as much as is generally contained in two barrels of porter.

28. Chalk, oyster shells, crab eyes, oil of vitriol, hartshorn shavings, salt of wormwood, &c.

Extract from the Chemical Catechism.
By Samuel Parker, F.L.S., &c.

Page 432. We are told that fraudulent wine merchants here sweetened their wines and ciders by the addition of lead.

Watson's Chemical Essays, vol. iii. p. 369.

Dr. Wellich's Lectures on Diet and Regimen, pp. 349 to 362, gives directions how to detect wines adulterated with lead and other ingredients.

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Dr. Warren, Medical Trans. vol. 2d, p. 80, states an instance of twenty persons having become severely ill, after drinking white wine that had been adulterated with lead. One of them died, and one became paralytic.

Graham one Wine Making, p. 31. Lead is recommended to prevent wine from becoming acid. A pound of melted lead and litharge steeped in Vinegar, &c.

About the year 1812, many men were engaged in traveling through the country selling secret receipts for adulterating, or rectifying whisky, &c. Dr. Feuchtwanger, of New York city, in 1837, publicly advertised that he had a receipt for that purpose, which he would sell at a certain price, &c.

It was proved at Court in Reading, Pa., that liquors bought in Philadelphia at one dollar and twenty-five cents per gallon, were sold in Reading at one dollar per gallon, and a profit made by it!!

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